гистопрепарата. Это выявило ее как сильные, так и слабые стороны. Сдача модульного контроля на 3 курсе способствует формированию у студентов умения комплексно использовать полученные знания в дальнейшей профессиональной деятельности. Но и снижением информационной перегруженности студентов первого курса в связи сдачей модульного контроля II на 3 курсе к этому времени **д**ает и слабые стороны, так как студенты частично не помнят материал модульного контроля **II.**

Выводы.

Таким образом, стажировка по специальности «Гистология, цитология и эмбриология» ВГУЗ Украины «Буковинский государственный медицинский университет» дала возможность увидеть связь междисциплинарной интеграции учебного процесса по дисциплине «Гистология, цитология и эмбриология» по специальности «лечебное дело» и углубить международное сотрудничество и обмен опыта.

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POLARIZATION STUDIES OF TISSUE OF SOME ENDOCRINE GLANDSIN OF INTACT RATS

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For the last decade topicality of the use of laser polarimetry methods has grown to determine properties of biological tissues as exactly they allow to find out the spatially updiffused properties of an object, define the presence of dissipation areas distribution and get local high-frequency information. Interesting are possibilities of the use of laser polarimetry methods to determinethe properties of glandular tissue, namely tissues of the thyroid and suprarenal glands. In the process of development of diagnostic methods, it was found that the peculiarity of biological tissue structure is a double-base amorphously crystalline structure[1,2]. The use of lasers in biomedical optics stipulated the development of a number of researches – laser polarimetry of the biological tissues, which is based on the statistical analysis of polarizing-

inhomogeneous objective fields [3,4]. Radiation field dispersed by biological tissue, becomes the carrier of information about their properties. This information is found to be contained in photometric, spectral, polarization and correlation characteristics of light vibrations [5]. However,the questions of the use of laser polarimetry methods remain little studied to examine the properties of glandular tissue, such as the thyroid and suprarenal glands which is topical for differential diagnostics of their pathological processes.

Objectives of the research. To study polarizing properties of optically thin cuts of the thyroid and suprarenal glandstissues of intact rats.

Materials and methods. Researches are conducted on 24 white mature rats-males with initial body weight 100-150 grammes. To study polarization properties of the thyroid and suprarenal glands they were removed and fixed in 10% neutral formalin solution with the triple change of a fixator, dehydrated in the alcohols of growing concentration, whereupon sealed in paraffin blocks.Microsections 5-6 mkm thick were made and studied under BIOLAMAS P-12, a light microscope. To estimate diagnostic possibilities of statistical analysis of the tissue images of the glands non-stained microsections were examined from physiological normal glands of the intact rats. Polarization images of the thyroid and adrenal tissues were received by microobjective lens, projected in the plane of photosensitive ground (800x600 pixel) of CCD-camera, which provided the range of measuring structural elements of the biological tissues for such sizes: 2 mkm – 2000 mkm. Examination of polarization images of gland tissues are presented by an optical chart (fig. 1). Illumination was conducted by the parallel (∅ = 10^4мkm) bunch of He-Ne laser (λ = 0.6328 мkm, W = 5.0 мВт). Polarization illuminator consists of quater wave plates 3; 5 and polarizer 4, that provides forming of laser bunch with an arbitrary azimuth $0^0 \le \alpha_0 \le 180^0$ or ellipticity $0^0 \le \beta_0 \le 90^0$ ofpolarization.

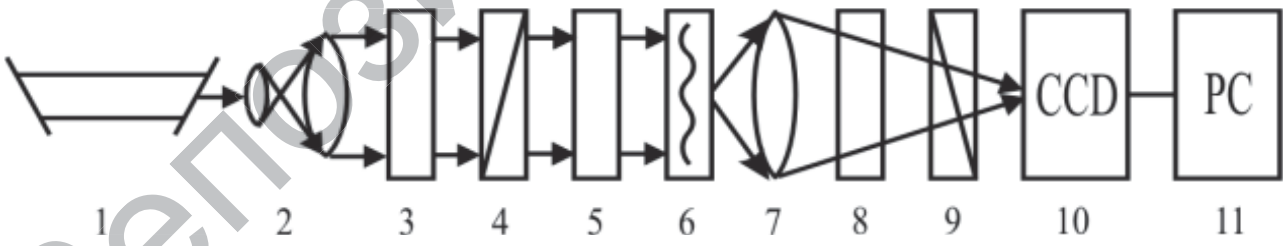

Fig. 1. Optical chart of polarization images examination of microsections of the thyroid and suprarenal gland tissues

Results of the research and discussion. Polarization images are presentedon (fig. 2) optically thin microsections of the thyroid glands in the norm (coefficient of weakening, $\tau \le 0{,}1$ geometrical thickness 40 μm) for axial (0-0) and crossed (0-90) polyarizer 4 and analyzer 9. As a basic analytical instrument to evaluate aggregation of casual values characterizing the image of a biological object (intensities) and its optical geometrical structure (directions of

orientations of protein fibrils ρ and index of double refraction of their matter Δn), the statistical moments of the first$M$, secondσ, third $A$and fourth E orders of their values were used, which calculated by finding an average on every pixel of recording CCD– camera.

0 – 0 0 – 90

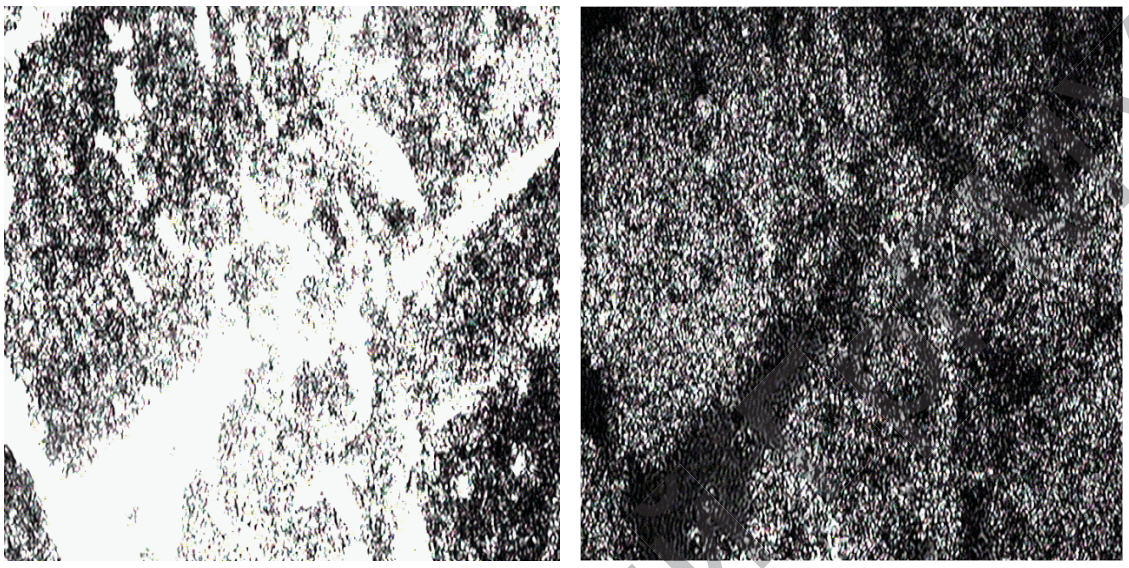

Fig. 2. Polarization images of optically thin cuts of the thyroid gland, got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

The findings obtained demonstrate the tendency of growth of statistical moments values of distributing orientations of the thyroid gland tissue. The statistical moments of the third (A_ρ) and fourth (E_ρ) order grow most quickly(table.1). Polarization images are presented on (fig. 3, 4, 5, 6) optically thin microsections of the cortical and medullar tissues oftheadrenalgland in the norm (coefficient of weakening, geometrical thickness 40 μm) got for axial (0-0) and crossed (0-90) polyarizer 4 and analyzer 9.

Table.1.Statistical moments of 1 – 4 th orders of the coordinate distribution of intensity of the thyroid gland images

I	$I(0-0)$	$I(0-90)$
M	$0{,}9 \pm 5\%$	$0{,}6 \pm 4\%$
σ	$0{,}23 \pm 4\%$	$0{,}29 \pm 6\%$
A	$38{,}6 \pm 7\%$	$26{,}8 \pm 11\%$
E	$74{,}2 \pm 9\%$	$132{,}8 \pm 14\%$

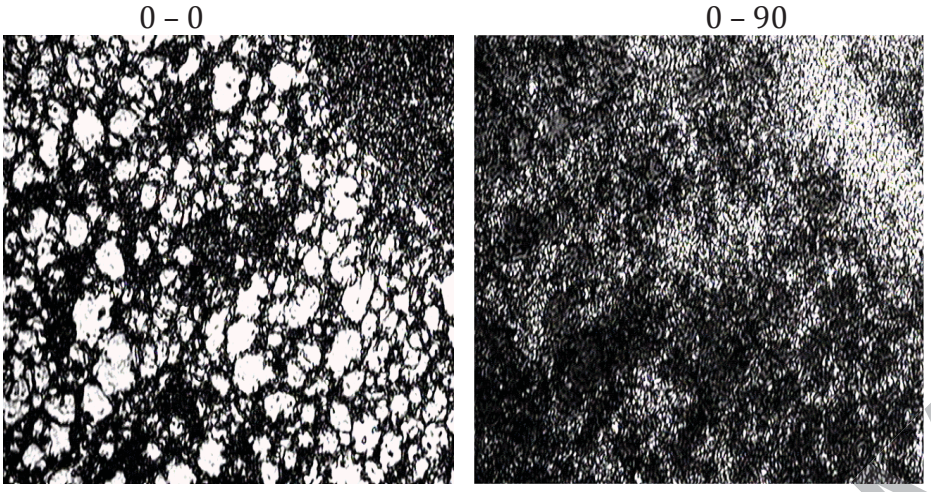

Fig.3. Polarization images of opticallythin cuts of the glomerular zone tissue of the adrenal gland, got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

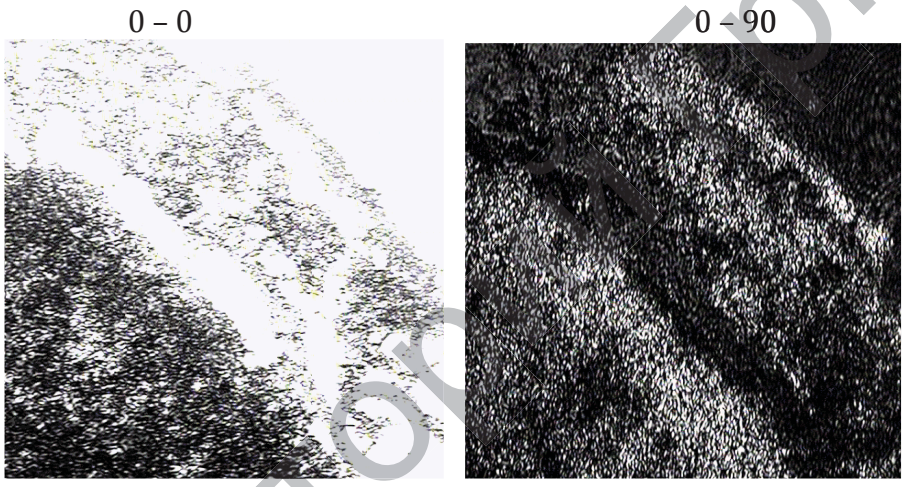

Fig.4. Polarization images of optically thin cuts tissues of the fasciculate zone of the adrenal cortex, got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

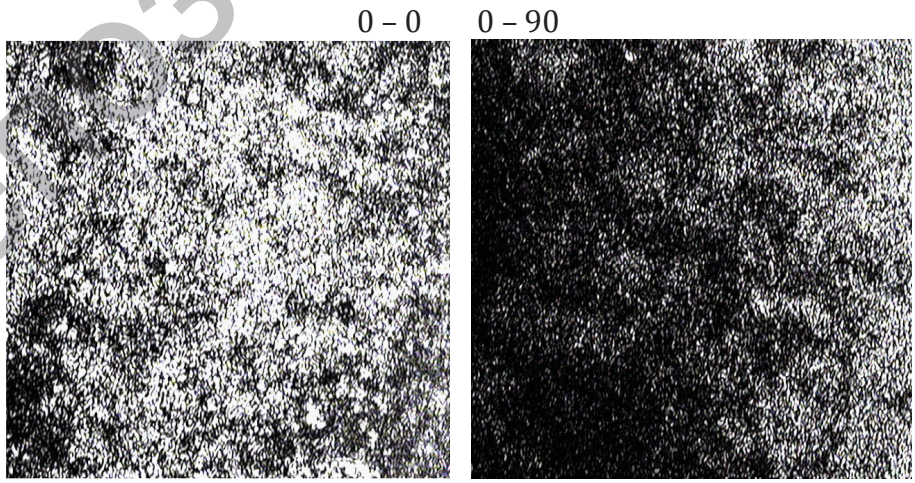

Fig.5. Polarization images of optically thin cuts tissues of the reticular zone of the adrenal cortex, got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

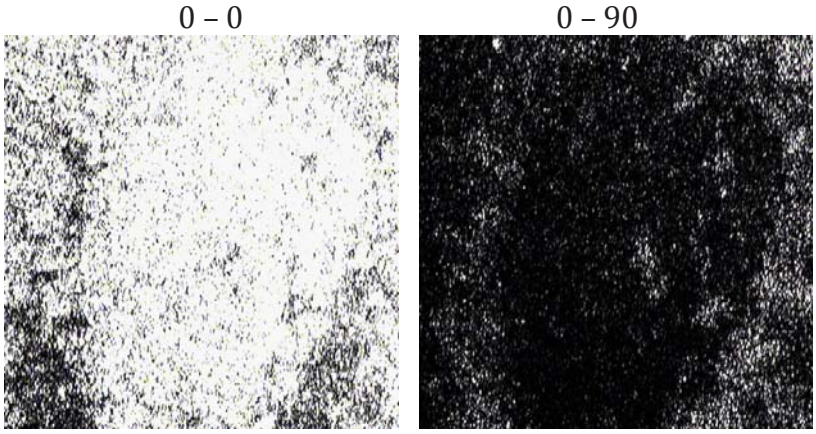

Fig.6. Polarization images of optically thin cuts oftheadrenal medulla, got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

An image of optically-thin(a coefficient of weakening, is a geometrical thickness 40) microsections of fabric is the prostates got for співвісних (0 – 0) and crossed (0 – 90) поляризатора 4 and analyzer 9 presented on rice. 7.

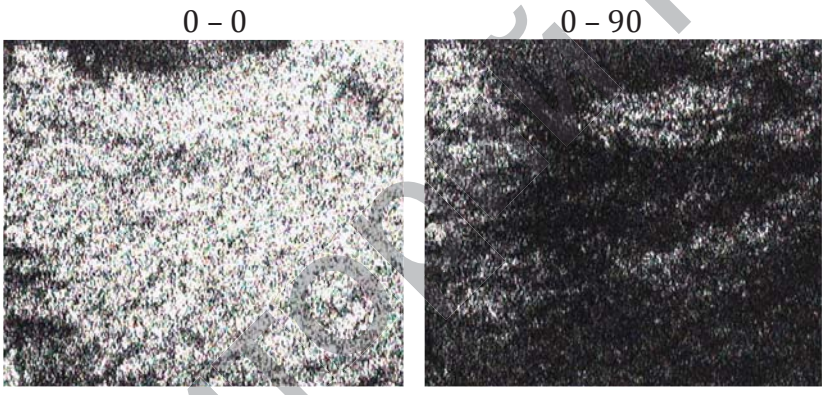

Fig.7. Polarization images of optically-thin layers of fabric are the prostates got for axial (0 – 0) and crossed (0 – 90) polyarizer and analyzer

The findings obtained demonstrate the tendency of growth of statistical moments values of distributing orientations of the prostate gland tissue. The statistical moments of the third (A_ρ) and fourth (E_ρ) order grow most quickly(table.2).

Table.2.Statistical moments of 1 – 4 orders of co-ordinate distributions of intensity of images of fabric of prostate gland

I	I (0 – 0)	I (0 – 90)
M	0,9 ± 5%	0,6 ± 4%
σ	0,23 ± 4%	0,29 ± 6%
A	38,6 ± 7%	26,8 ± 11%
E	74,2 ± 9%	132,8 ± 14%

Statistical approach in the analysis of polarization images was found to detect considerable diagnostic sensitiveness of the moments of higher distribution orders of image intensity of optically thin microsections of the thyroid and suprarenal glands. Consequently, theresults obtained correlate with previous information of statistical researches of polarization properties of other biological tissues (derma of skin, muscular tissue) [2,5].

Conclusion. Performed polarization researches for intact animals allowed to set the parameters of the norm of polarization properties of the thyroid and suprarenal glandstissues in rats.

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ОСОБЕННОСТИ АНТРОПОМЕТРИЧЕСКИХ ИНДЕКСОВ ЖЕНЩИН С ЯЗВОЙ ЖЕЛУДКА И 12-ПЕРСТНОЙ КИШКИВ ВОЗРАСТЕ 36-55 ЛЕТ

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Современное понятие «конституция человека» включает в себя совокупность относительно устойчивых морфологических, биохимических, серологических свойств человека, обусловленных наследственностью, а также длительными, интенсивными влияниями окружающей среды, в результате которых определяются функциональные способности и реактивность организма [1,2]. Конституция и обусловленная ей различная степень сопротивляемости организма формируют основу для развития тех или иных заболеваний. В результате определенный тип конституции каждого человека оценивает его настоящий статус и позволяет прогнозировать возможность возникновения у него определенных заболеваний в будущем [4]. Учитывая особенности индивидуальной конституции человека, можно